

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P735864

Luminaire Tested: S122DRP-S290D840-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

Test Information

Test Method: LM-79-2024
Report Number: P735864
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2308-143-1)
Test Lab: INNOVATION CENTER
Issue Date: 1/24/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S290D840-X4F0-XX-UDD-W-W
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

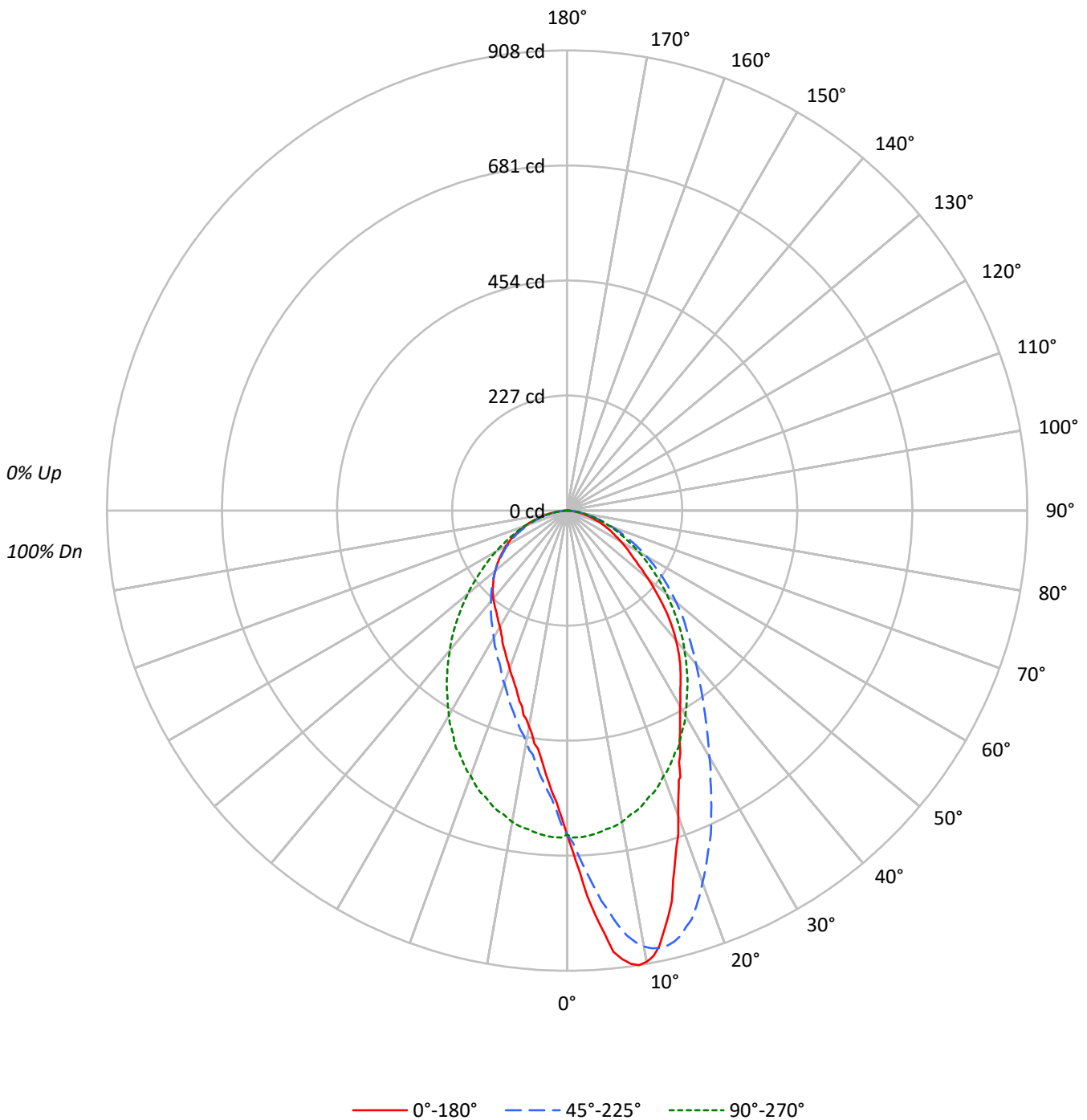
Lumens per Lamp: N/A
Luminaire Lumens: 1301.2 lumens
Efficiency: N/A
Efficacy: 104.1 lumens/watt
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')
CIE Type: Direct

Input Watts (W): 12.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	67	60	83	73	66	60	71	64	59	69	63	58	67	62	58					56				
5	79	67	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51					49				
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46					44				
7	69	56	48	42	67	55	47	42	54	47	42	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37					35				
9	60	48	40	35	59	47	40	34	46	39	34	45	39	34	44	38	34					32				
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31					30				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	12292	12292	12292	12292	12292
5°	16123	14901	12356	10363	9889
10°	17646	17055	12173	9060	8441
15°	15876	17275	11842	8179	7486
20°	13099	15977	11391	7417	6789
25°	11196	14254	10990	6861	6293
30°	9901	12449	10361	6430	5893
35°	9158	11026	9717	6127	5723
40°	8383	9949	9043	5866	5691
45°	7383	9082	8364	5687	5616
50°	6217	8373	7664	5532	5547
55°	5228	7704	6923	5348	5449
60°	4713	6962	6285	5186	5340
65°	4280	6117	5599	4939	5239
70°	3855	5288	5041	4569	4962
75°	3364	4471	4307	4144	4538
80°	2823	3498	3498	3597	3797
85°	2139	2514	2624	2801	2713

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 13333 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.9	4.8
10°-20°	172.7	13.3
20°-30°	226.5	17.4
30°-40°	239.4	18.4
40°-50°	222.3	17.1
50°-60°	177.9	13.7
60°-70°	121.7	9.4
70°-80°	62.8	4.8
80°-90°	14.9	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	462.2	35.5
0°-40°	701.6	53.9
0°-60°	1101.9	84.7
0°-90°	1301.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1301.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	640	640	640	640	640	
5°	836	772	640	537	512	82
15°	798	868	595	411	376	219
25°	528	672	518	324	297	243
35°	390	470	414	261	244	244
45°	272	334	308	209	207	209
55°	156	230	207	160	163	143
65°	94	134	123	109	115	93
75°	45	60	58	56	61	48
85°	10	11	12	13	12	12
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	639.5	639.5	639.5	639.5	639.5	639.5	639.5	639.5	639.5
1°	674.7	671.2	655.8	656.7	645.3	632.5	620.6	613.2	607.0
2°	714.3	707.2	683.1	671.2	645.3	618.0	593.4	586.8	578.4
3°	762.2	745.5	712.1	683.9	644.4	604.8	571.0	559.1	557.8
4°	800.8	785.9	741.5	697.1	642.2	592.1	553.8	541.1	534.9
5°	835.6	825.9	772.3	713.8	640.4	579.8	537.1	519.5	512.5
6°	875.6	855.8	796.9	730.5	637.3	567.9	522.2	501.1	491.4
7°	891.8	879.5	824.6	741.5	633.4	554.3	503.3	480.4	473.4
8°	903.3	898.4	846.6	759.5	631.6	541.5	486.6	472.5	464.2
9°	908.1	904.1	862.4	767.0	628.5	534.9	478.2	454.9	445.7
10°	904.1	905.9	873.8	778.4	623.7	521.3	464.2	443.9	432.5
11°	894.9	899.3	880.0	791.6	617.6	510.3	451.4	430.8	419.8
12°	877.3	887.0	882.6	800.8	611.8	500.6	442.6	422.8	413.2
13°	850.1	871.6	880.8	804.8	608.3	489.7	431.6	408.8	396.5
14°	825.5	847.9	876.0	813.6	602.2	477.3	421.5	398.7	388.1
15°	797.8	823.7	868.1	816.2	595.1	467.2	411.0	385.9	376.2
16°	759.1	793.8	853.6	819.3	586.8	455.8	401.3	377.6	364.8
17°	727.0	764.4	842.6	821.1	582.4	447.0	393.0	364.8	356.5
18°	697.6	739.8	822.8	819.7	575.4	436.9	380.6	355.6	347.7
19°	674.3	708.5	803.0	816.7	565.7	427.2	371.4	349.0	339.8
20°	640.4	680.0	781.1	815.4	556.9	418.4	362.6	339.8	331.9
21°	612.3	652.7	760.9	811.0	550.7	410.1	356.0	331.0	323.9
22.5°	575.4	611.0	727.0	802.6	537.1	396.0	341.5	322.6	313.0
23°	571.0	601.3	718.2	800.0	533.2	393.0	336.7	317.8	309.9
24°	543.3	575.4	697.6	791.6	523.1	383.3	328.8	312.1	302.8
25°	527.9	554.3	672.1	783.7	518.2	374.5	323.5	304.6	296.7
26°	506.4	536.7	649.2	772.3	507.7	366.6	315.2	298.0	290.5
27°	490.5	516.0	625.5	763.9	495.4	358.2	308.6	291.4	282.2
28°	475.1	499.8	602.6	750.3	486.6	349.0	303.7	285.7	276.9
29°	459.3	480.9	584.2	739.8	478.2	341.1	296.3	278.2	269.9
30°	446.1	465.9	560.9	725.7	466.8	331.9	289.7	273.0	265.5
32.5°	415.8	432.5	513.4	692.3	439.5	313.4	273.8	258.5	254.1
35°	390.3	401.3	469.9	654.9	414.1	293.6	261.1	246.1	243.9
37.5°	363.5	374.1	430.3	615.8	387.2	275.6	246.6	236.9	235.2
40°	334.1	348.1	396.5	577.1	360.4	258.0	233.8	226.4	226.8
42.5°	304.6	320.9	363.5	531.8	335.4	241.3	221.5	216.3	217.1
45°	271.6	292.3	334.1	490.5	307.7	225.5	209.2	206.6	206.6
47.5°	237.4	263.7	308.6	447.9	281.3	209.7	197.4	195.6	196.5
50°	207.9	231.6	280.0	406.6	256.3	195.2	185.0	184.6	185.5
52.5°	178.9	202.6	254.9	367.9	230.8	182.0	173.2	173.2	174.1
55°	156.0	174.5	229.9	327.5	206.6	166.6	159.6	160.9	162.6
57.5°	140.2	152.5	205.3	288.8	184.2	151.6	147.2	148.1	150.3
60°	122.6	132.3	181.1	253.2	163.5	137.1	134.9	136.7	138.9
62.5°	106.8	115.2	158.2	221.1	141.1	123.1	122.2	124.8	127.0
65°	94.1	99.8	134.5	188.6	123.1	109.0	108.6	112.5	115.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
67.5°	80.9	85.3	113.8	157.8	105.1	94.9	94.9	99.3	101.5
70°	68.6	72.1	94.1	130.1	89.7	80.9	81.3	86.6	88.3
72.5°	55.8	58.9	76.5	104.6	72.5	67.7	69.0	73.4	75.2
75°	45.3	47.5	60.2	82.6	58.0	54.1	55.8	59.8	61.1
77.5°	34.7	36.5	44.4	60.7	44.4	42.2	44.0	47.5	47.5
80°	25.5	25.9	31.6	42.6	31.6	30.3	32.5	34.3	34.3
82.5°	16.7	17.6	20.7	27.3	21.1	20.7	21.5	22.9	22.9
85°	9.7	10.1	11.4	14.9	11.9	11.9	12.7	12.7	12.3
87.5°	4.0	4.4	4.8	5.7	5.3	5.7	5.7	4.8	5.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	17.94	19.46	18.30	19.77	20.09	17.51	19.03	17.88	19.35	19.66
	3H	19.14	20.50	19.52	20.83	21.19	19.02	20.39	19.40	20.72	21.08
	4H	19.54	20.82	19.94	21.17	21.55	19.55	20.83	19.95	21.18	21.56
	6H	19.79	20.97	20.20	21.34	21.73	19.90	21.09	20.32	21.46	21.85
	8H	19.85	20.98	20.28	21.37	21.77	20.00	21.13	20.43	21.52	21.92
	12H	19.88	20.96	20.31	21.34	21.77	20.05	21.13	20.48	21.52	21.95
4H	2H	18.99	20.28	19.39	20.62	21.00	18.58	19.86	18.98	20.21	20.59
	3H	20.36	21.42	20.77	21.82	22.22	20.21	21.27	20.62	21.67	22.07
	4H	20.82	21.78	21.25	22.19	22.63	20.79	21.75	21.22	22.16	22.60
	6H	21.13	21.96	21.59	22.41	22.87	21.21	22.04	21.67	22.49	22.95
	8H	21.21	21.99	21.67	22.43	22.90	21.33	22.11	21.79	22.55	23.02
	12H	21.26	21.95	21.74	22.43	22.90	21.40	22.10	21.88	22.58	23.05
8H	4H	21.17	21.95	21.64	22.40	22.86	21.13	21.91	21.59	22.35	22.82
	6H	21.57	22.22	22.07	22.71	23.19	21.65	22.29	22.15	22.78	23.26
	8H	21.70	22.27	22.21	22.78	23.27	21.82	22.39	22.33	22.90	23.39
	12H	21.78	22.29	22.29	22.78	23.35	21.94	22.45	22.45	22.94	23.51
12H	4H	21.20	21.89	21.68	22.37	22.84	21.15	21.84	21.63	22.32	22.79
	6H	21.62	22.20	22.13	22.71	23.20	21.69	22.27	22.20	22.78	23.27
	8H	21.79	22.30	22.30	22.79	23.36	21.91	22.42	22.42	22.91	23.47